OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD

BOARD STAFF'S REVIEW OF THE PETITION

By: David Kernazitskas

Petition File No.: 532

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Date: March 18, 2013

Introduction

On December 12, 2012, the Occupational Safety and Health Standards Board (Board) received a petition dated December 10, 2012 from William Loupè, Safety Consultant, (Petitioner). The Petitioner requested that the Board amend Title 8, California Code of Regulations, Section 3212(f) of the General Industry Safety Orders, concerning the requirement for personal fall protection systems while working on glazed skylight surfaces even when the glazed surface has been certified by a registered engineer as being able to support all anticipated loads.

Labor Code Section 142.2 permits interested persons to propose new or revised regulations concerning occupational safety and health and requires the Board to consider such proposals and to render its decision no later than six months following their receipt. In accordance with Board policy, the purpose of this evaluation is to provide the Board with relevant information upon which to base a reasonable decision.

History

On April 5, 1989, Petition 271 (Jean P Dickey, UCSD) was received asking the Board to address the guarding requirements of Section 3212 for employees working near the edges of roofs without parapets. The petition was granted and led to a requirement to guard work areas for six feet on either side of the work area where employees are exposed to the edge of a roof.

Petition 293 (C.W. Burke, Associated General Contractors of America) was received on May 6, 1991 and requested the Board to address the hazards associated with skylights and skylight assemblies. The fall prevention provisions of the current standard resulted from Petition 293.

Petition 531 (Bryan Crabb, California Solar Energy Industries Association) was received on October 25, 2012, requesting the Board to review the fall protection requirements for working within six feet of a roof opening or skylight. This matter is currently before the Board and has not been acted upon.

Reason for the Petition

Section 3212(f) prohibits employees from accessing glazed surfaces on roofs or skylights unless the surface has been certified by an experienced engineer registered in the State of California to support all anticipated loads. Employees working on such a surface are required to wear personal fall protection.

The Petitioner questions the need for the redundant fall protection system when the surface "has been tested and documented by a registered engineer to support all anticipated loads." He claims that the wording of Section 3212(f) is "vague and ambiguous as it relates to compliance or implementation."

He describes an enforcement visit to a client in Southern California where the Division of Occupational Safety and Health (Division) issued an Order Prohibiting Use (OPU) for employees working without a personal fall protection system near unguarded skylights. He states that the skylight manufacturer documented that the skylight glazing material meets federal and California requirements of withstanding a 200 and 400 pound load, respectively, applied perpendicularly to any part of the skylight screen, and that this information was provided to the Division compliance officer to no avail. Finally, the Petitioner claims that if there were any issues with the testing and certifications from the skylight manufacturer, a hazard alert would have been issued. He requests clarification of the requirements of Section 3212(f).

As part of the Petition, the Petitioner submitted a copy of the testing data performed on a skylight similar to the one installed on the roof where his client received the OPU. The testing data showed that the skylight glazing was strong enough to hold a 400 pound load, which is equivalent to the load requirement for a cover or screen used to protect a skylight from employee break-through.

National Consensus Standard

ASTM WK17797 - New Test Method for Human Impact on Commercial Skylights is currently being developed. When completed, the standard will provide a testing protocol for skylights to be certified for a period of time as strong enough to protect roofers and maintenance personnel from falling through the glazing material. The project was initiated in December 2007. A representative from the ASTM subcommittee working on the project estimated that the standard would be ready for publication by early 2014.

Federal OSHA Standards

Federal standards are limited to the protection of employees from falling through floor and roof openings and do not specifically address employees working on glazed surfaces.

Division Evaluation

To date, an evaluation from the Division has not been received.

Staff Evaluation

Skylights and transparent roof openings are becoming more popular as means to reduce energy consumption during peak hours of the day. The transparent material used in the opening or skylight is referred to as "glazing" and can be made of glass or various types of plastic and plastic-like materials.

Skylights are typically stand-alone structures on a roof. An employee performing maintenance or repairs on a skylight is standing on and supported by the roof of the building. Larger roof openings, including vaults and canopies, can be covered by several connected sections of glazing material and cover a large area of the roof. An employee

performing maintenance or repair of a glazed surface may not be able to access the inner areas of the surface while standing on the roofing materials. Section 3212(f) comes into play when the latter condition applies.

Section 3212(f) states in its entirety:

> "Access shall not be permitted on glazed surfaces such as roofs, vaults, canopies, or skylights glazed with transparent or translucent materials unless an engineer currently registered in the State of California and experienced in the design of such glazed structures has certified that the surface will support all anticipated loads. Employees working on such surfaces shall be protected by a fall protection system meeting the requirements of Section 1670 of the Construction Safety Orders."

The roofing contractor mentioned in the Petition was cited for working near the glazed surfaces (skylights) without fall protection. The laboratory evaluation of the skylight glazing, submitted by the Petitioner, was performed by a lab in British Columbia, Canada. Through a discussion with the Petitioner, Board staff learned that the skylight glazing material on the roof was not evaluated. Instead, the skylight manufacturer provided lab testing results from a similar skylight tested in 2005.

Moreover, Section 3212(f) does not apply to the roofing contractor in this situation because the employees were not working on the glazed surface, but rather next to it. If they were working on the glazed surfaces, the standard clearly states that employees must wear fall protection. If employees work next to the glazed surfaces or skylights, the provisions of Section 3212(e) apply, and that section requires an employer to protect employees from falling through the skylight by means of skylight screens or covers, guardrails, or personal fall protection systems. In either case, the employees are required to wear fall protection when no other guarding is provided.

The Petitioner's claim that the lab tests demonstrate that the glazing material is in compliance with California standards is also invalid. Section 3212(f) clearly requires that the certification be performed by a California-registered engineer. The lab results provided were from a company in Canada with no mention of an engineer registered in California. Additionally, and more importantly, glazing materials degrade over time and can become severely weakened due to environmental exposures. A California-registered engineer is required to certify the glazing on the specific roof upon which the work is to be performed. A certification for a skylight before installation with no information provided on the expected environmental decay of the glazing is irrelevant to a similar skylight installed on a roof that has been exposed to the elements for a period of time.

In a discussion of the Petition with representatives from the United Union of Roofers, Waterproofers and Allied Workers, Local 81 in Oakland, California, one of the roofers related a story where an employee nearly fell through glazing that was supposedly certified to be safe to access. The roofer picked up tar and gravel on his boot while walking on the roof, and when he stepped on the glass surface, the glazing started to crack. The crew suspected that the pressure on the glass created by a pebble caught in the

boot tread was enough to cause the crack. The employee was able to get to safety without falling through the roof, but the glass was severely cracked. The roofer was wearing personal fall protection, which would have protected him had the glass given way completely.

The Petitioner's concern regarding the need for fall protection when a surface is certified by a California-registered engineer as being able to support all anticipated loads is understandable. Requiring an employer to provide fall protection after such a certification could prove burdensome to an employer who has already undergone the expense of having the glazed surface evaluated by the engineer. Due to the unpredictability of the hazards of working on glazed surfaces, which include slipping and sliding on the glazing and stressors applied to the glazing by tools or sharp objects contacting the surface, however, fall protection is a necessary back-up precaution to ensure the safety of the employee accessing the glazed surface.

The benefit of Section 3212(f) to employers is that an employee can access a glazed surface without the need for scaffolds, catwalks, platforms or other safe access methods required by Section 3212(g). The inclusion of a fall protection requirement in Section 3212(f) does not negate that benefit.

Recommendation

Board staff recommends that this petition be denied for the reasons previously discussed.